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10/624,481	07/23/2003	Makoto Fujiwara	60188-593	7409

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EXAMINER	
BANKS, CORBANN	
ART UNIT	PAPER NUMBER
2132	

DATE MAILED: 11/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,481	FUJIWARA ET AL.	
	Examiner	Art Unit	
	Corbann A. Banks	2132	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) ~~[redacted]~~ is/are allowed.

6)☒ Claim(s) *1 - 10, 12-14, and 17* is/are rejected.

7)☒ Claim(s) *11, and 15 – 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *April 29, 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because it does not produce a tangible result.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 7 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 7 mentions an " administrator mode ", which is not adequately described in the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "providing an LSI device having the

same structure as that of the LSI device;", which is confusing and vague, making the claim indefinite. It is construed by the examiner that the LSI device is already included. Claim 8 recites "comprising: an LSI device having the same structure as that of an LSI device on which the encrypted program runs;" which is confusing and vague, making the claim indefinite. Claim 8 also recites "storing a raw (binary) program" and executing the raw (binary) program", which is not adequately described in the specification, thus making the claim more vague and indefinite. Examiner considers "raw (binary) program" to be equivalent to a program for the purpose of examination.

Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01. The omitted elements are: the steps adequately describing "developing the program on the development LSI device", as recited in claim 1.

Claims 2 – 7 and 9 are rejected based on their dependency on rejected claims 1 and 8 above.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 – 8, 12, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Kuroda et al. (US Patent # 6,421,779 B1).

Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. Applicant should consider the entire prior art as applicable as to the limitations of the claims. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Here, Kuroda shows a method / program development supporting system for developing a program which is to be installed in a system having an LSI device (see Figure 6, element 1, and column 13, lines 35 – 40), the LSI device having a secure memory which includes an unrewritable area (see Figure 6, element 3), the method comprising the steps of: providing an LSI device having the same structure as that of the LSI device; setting the provided LSI device to a development mode (see Figure 16, step S36) so that the provided LSI device is used as a development LSI device, the development mode being different from a product operation mode employed at the times of program installation and product operation, and developing the program on the development LSI device (see Figure 16, steps S36 – S43);

As per claim 8: Kuroda shows the additional limitations - on which the encrypted program runs (see column 13, lines 40 - 43); and an external memory (see Figure 9, element 21) for storing a raw (binary) program, wherein the LSI device includes a secure memory for storing common key information regarding a raw common key (see

Figure 6, element 3), and the LSI device is capable of executing a first step of obtaining the raw common key (see column 12, lines 56 –61; Examiner considers Message Authentication Code (MAC) to correspond to "the raw common key") from the common key information stored in the secure memory, and a second step of encrypting the raw (binary) program input (see column 12, lines 56 - 64) from the external memory using the raw common key;

As per claim 12: Kuroda shows the additional limitations - an initial value setting procedure for storing common key information regarding a raw common key and inherent key information regarding a raw inherent key in the secure memory (see Figure 16, steps S34 – S38); a third step of obtaining in the LSI device the raw inherent key (see column 12, lines 57 – 61, Examiner considers individual key (Ikey) to correspond to "raw inherent key") from the inherent key information stored in the secure memory; a fourth step of encrypting in the LSI device the raw (binary) program (see column 12, lines 56 - 64) obtained at the second step using the raw inherent key obtained at the third step, thereby obtaining an inherent key-encrypted program; and the step of installing the inherent key-encrypted program (see column 13, lines 1 – 5) obtained at the fourth step in the external memory;

As per claim 2: Kuroda shows the additional limitations - wherein the operation of the LSI device is restricted such that when being set to the development mode (see column 13, lines 30 – 35), the LSI device can execute a raw (binary) program, and when being set to the product operation mode (see Figure 17), the LSI device cannot

execute a raw (binary) program (Examiner considers that when the process of Figure 17 is implemented, no MAC generation (i.e. development) is obtained);

As per claim 3: Kuroda shows the additional limitations - further comprising the step of encrypting the program developed on the development LSI device at the program development step (see Figure 17, and column 13, lines 40 - 57);

As per claim 4: Kuroda shows the additional limitations - wherein the operation of the LSI device is restricted such that when being set to the development mode, the LSI device cannot generate a key for encrypting a raw (binary) program (see column 13, lines 5 – 40, Examiner considers that the Message Authentication Code (MAC) cannot be generated without the development of T-ID);

As per claim 5: Kuroda shows the additional limitations - further comprising the steps of: providing an LSI device (see Figure 6, element 1, and column 13, lines 35 – 40) having the same structure as that of the LSI device; setting the provided LSI device to a key-generation mode (see column 12, lines 41 – 42: "data transfer phase", and Figure 16) so that the provided LSI device is used as an key-generation LSI device, the key-generation mode being different from the development mode and the product operation mode; and installing an encrypted key-generation program (see Figure 6, element 3) in the key-generation LSI device and executing the key-generation program to generate a key (see Figure 16, step S36);

As per claim 6: Kuroda shows the additional limitations - wherein the operation of the LSI device is restricted such that when being set to the key-generation mode, the LSI device cannot execute a raw (binary) program (see column 13, lines 12 - 15);

As per claim 17: Kuroda shows the additional limitations - wherein the inherent key information is an inherent ID (see columns 13 - 14, lines 62 – 67, and 1 - 3) which is inherent to the LSI device.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10, and 13 - 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. (US Patent # 6,421,779 B1), in view of Giles et al. (US Patent # 7,117,352B1).

Examiner has pointed out particular references contained in the prior arts of record in the body of this action for the convenience of the applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. Applicant should consider the entire prior art as applicable as to the limitations of the claims. It is respectfully requested from the applicant, in preparing the response, to consider fully the entire references as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior arts or disclosed by the examiner.

Here, the Kuroda reference has disclosed all the limitations of the rejected claims as it has been applied to above. However, Kuroda does not teach the use of a boot program stored in the boot ROM which executes the first through fourth steps described above in the limitations of claims 8 and 12.

On the other hand, Giles does teach the use of a boot program (see Figure 2, elements 180 and 182) stored in the boot ROM which is capable of executing the first through fourth steps described above in the limitations of claims 8 and 12.

Hence it would have been obvious to one of ordinary skill in the art to have included the boot program method shown in Giles, into the LSI invention taught by Kuroda above, in order to provide secured and One-Time Programmable (OTP) memory, authentication, and cache lockout (see column 1, lines 40 – 46 of the Giles reference). With respect to claim 10, the limitations shown there map directly onto the ones displayed by claim 13, and are rejected under the same premise.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuroda et al. (US Patent # 6,421,779 B1), in view of Giles et al. (US Patent # 7,117,352B1). Here, the Kuroda reference has been discussed above. However, Kuroda does not teach the use of storing inherent key information in an unrewritable area of the secure memory.

On the other hand, Giles does teach the use of a ROM (i.e. unrewritable) in a security (i.e. secured) mode (see column 3, lines 25 – 29, and column 4, lines 1 - 25) capable of storing such discussed in claim 14.

Hence it would have been obvious to one of ordinary skill in the art to have utilized the storing capability of the ROM using a boot program in Giles, in the LSI system and method in Kuroda, in order to provide secured and One-Time Programmable (OTP) memory, authentication, and cache lockout (see column 1, lines 40 – 46 of the Giles reference).

Allowable Subject Matter

Claims 11, and 15 – 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corbann A. Banks whose telephone number is (571) 270-1021. The examiner can normally be reached on Monday – Thursday from 8:30 am to 4:30 pm. The examiner can also be reached on alternate Fridays during the same hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron, can be reached on Monday – Friday from 8:30 am to 4:30 pm. His telephone number is (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C.B.

Corbann Banks

October 27, 2006

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